Adventures in Aeronautics			
2008 Science			
Grade and Course Level Expectations			
Missouri Science			
Grade 3			
Activity/Lesson	**State**	**Standards**	
Adventures in Aeronautics	MO	SCI.3.8.1.B.a	Describe how new technologies have helped scientists make better observations and measurements for investigations (e.g., telescopes, magnifiers, balances, microscopes, computers, stethoscopes, thermometers)
Adventures in Aeronautics	MO	SCI.3.8.2.A.a	Research biographical information about various scientists and inventors from different gender and ethnic backgrounds, and describe how their work contributed to science and technology
Adventures in Aeronautics			
2008 Science			
Grade and Course Level Expectations			
Missouri Science			
Grade 4			
Activity/Lesson	**State**	**Standards**	
Adventures in Aeronautics	MO	SCI.4.2.1.A.b.	Describe an object's motion in terms of distance and time
Adventures in Aeronautics	MO	SCI.4.2.2.A.a.	Identify the forces acting on the motion of objects traveling in a straight line (specify that forces should be acting in the same line as the motion, provide examples)
Adventures in Aeronautics	MO	SCI.4.2.2.A.b.	Describe and compare forces (measured by a spring scale in Newton's) applied to objects in a single line
Adventures in Aeronautics	MO	SCI.4.2.2.A.c.	Observe and identify friction as a force that slows down or stops a moving object that is touching another object or surface
Adventures in Aeronautics	MO	SCI.4.2.2.A.d.	Compare the forces (measured by a spring scale in Newton's) required to overcome friction when an object moves over different surfaces (i.e., rough/smooth)
Adventures in Aeronautics	MO	SCI.4.2.2.B.a.	Determine the gravitational pull of the Earth on an object (weight) using a spring scale
Adventures in Aeronautics	MO	SCI.4.2.2.D.a.	Observe that balanced forces do not affect an object's motion (need to clarify that balanced forces means no change in forces acting on an object)
Adventures in Aeronautics	MO	SCI.4.2.2.D.b.	Describe how unbalanced forces acting on an object changes its speed (faster/slower), direction of motion, or both (need to clarify that unbalanced forces means any change in forces acting on an object)

Adventures in Aeronautics	MO	SCI.4.2.2.D.c.	Predict how the change in speed of an object (i.e., faster/slower/remains the same) is affected by the amount of force applied to an object and the mass of the object
Adventures in Aeronautics	MO	SCI.4.8.1.B.a.	Describe how new technologies have helped scientists make better observations and measurements for investigations (e.g., telescopes, magnifiers, balances, microscopes, computers, stethoscopes, thermometers)
Adventures in Aeronautics	MO	SCI.4.8.1.C.a.	Identify how the effects of inventions or technological advances (e.g., different types of light bulbs, semiconductors/integrated circuits and electronics, satellite imagery, robotics, communication, transportation, generation of energy, renewable materials) may be helpful, harmful, or both
Adventures in Aeronautics	MO	SCI.4.8.2.A.a.	Research biographical information about various scientists and inventors from different gender and ethnic backgrounds, and describe how their work contributed to science and technology
Adventures in Aeronautics			
2008 Science			
Grade and Course Level Expectations			
Missouri Science			
Grade 5			
Activity/Lesson	**State**	**Standards**	
Adventures in Aeronautics	MO	SCI.5.2.2.A.a	Identify the forces acting on a load and use a spring scale to measure the weight (resistance force) of the load
Adventures in Aeronautics	MO	SCI.5.2.2.D.a	Describe how friction affects the amount of force needed to do work over different surfaces or through different media
Adventures in Aeronautics	MO	SCI.5.2.2.F.a	Explain how work can be done on an object (force applied and distance moved)
Adventures in Aeronautics	MO	SCI.5.2.2.F.c	Compare the measures of effort force (measured using a spring scale to the nearest Newton) needed to lift a load with and without the use of simple machines
Adventures in Aeronautics	MO	SCI.5.2.2.F.d	Observe and explain that simple machines change the amount of effort force and/or direction of force
Adventures in Aeronautics	MO	SCI.5.8.1.B.a	Describe how new technologies have helped scientists make better observations and measurements for investigations (e.g., telescopes, electronic balances, electronic microscopes, x-ray technology, computers, ultrasounds, computer probes such as thermometers)

Adventures in Aeronautics	MO	SCI.5.8.1.C.a	Identify how the effects of inventions or technological advances (e.g., complex machinery, technologies used in space exploration, satellite imagery, weather observation and prediction, communication, transportation, robotics, tracking devices) may be helpful, harmful, or both
Adventures in Aeronautics	MO	SCI.5.8.2.A.a	Research biographical information about various scientists and inventors from different gender and ethnic backgrounds, and describe how their work contributed to science and technology